

WE CLAIM:

1. A storage sub-system, comprising:
  - a recording medium that contains data divided into predefined volume units;
  - data transferring means for controlling data transfer to and from said recording medium;
  - a cache memory for storing data transferred to and from said recording medium;
  - redundant data generating means for generating redundant data from a plurality of data;
  - data restoring means for restoring original data from the redundant data and from the data from which the redundant data is generated;
  - control means that manages said redundant data and the data from which said redundant data is generated as a parity group; and
  - a staging information table for storing data being transferred from the recording medium to the cache memory;
  - wherein the staging information table further stores information indicating whether said redundant data to current data to be read or successive data to current data to be read are also to be read when said current data is read from the recording medium.

2. A storage sub-system as claimed in claim 1, wherein said staging information table contains a redundant data staging execution flag that indicates whether said redundant data is also to be read.

3. A storage sub-system as claimed in claim 2, wherein, if said redundant data staging execution flag indicates that said redundant data is to be read when the current data is read from the recording medium, data in the parity group containing said current data is read.

4. A storage sub-system as claimed in claim 2, further comprising user input means for setting the redundant data staging execution flag in said staging information table.

5. A storage sub-system as claimed in claim 2, wherein said control means has input means for setting the redundant data staging execution flag in said staging information table in response to a command.

6. A storage sub-system as claimed in claim 1, wherein said staging information table contains a pre-read staging execution flag that indicates whether said successive data is also to be read.

7. A storage sub-system as claimed in claim 6, wherein, if said pre-read staging execution flag indicates that said pre-read staging is to be executed when the current data is read from the recording medium, forward successive data to the current data is read.

8. A storage sub-system as claimed in claim 6, wherein, if said pre-read staging execution flag indicates that pre-read staging is to be executed when the current data is read from the recording medium, backward successive data to the current data is read.

9. A storage sub-system as claimed in claim 6, wherein, if said pre-read staging execution flag indicates that pre-read staging is to be executed when the current data is read from the recording medium, forward and backward successive data to the current data is read.

10. A storage sub-system as claimed in claim 6, further comprising user input means for setting the pre-read staging execution flag in said staging information table.

11. A storage sub-system as claimed in claim 6, wherein said control means has input means for setting the pre-read staging execution flag in said staging information table in response to a command.

12. A storage sub-system, comprising:

a recording medium that contains data divided into predefined volume units;

data transferring means for controlling data transfer to and from said recording medium;

a cache memory for storing data transferred to and from said recording medium;

redundant data generating means for generating redundant data from a plurality of data;

data restoring means for restoring original data from the redundant data and from the data from which the redundant data is generated;

control means that manages said redundant data and the data from which said redundant data is generated as a parity group; and

a staging information table for storing data being transferred from the recording medium to the cache memory;

wherein redundant data in the parity group containing said data being read is also read when said data is read from the recording medium, regardless of whether the data is successfully read.

13. A storage sub-system as claimed in claim 12, wherein said staging information table contains a redundant data staging execution flag that indicates whether said redundant data is also to be read.

14. A storage sub-system as claimed in claim 13, further comprising user input means for setting the redundant data staging execution flag in said staging information table.

15. A storage sub-system as claimed in claim 13, wherein said control means has input means for setting the redundant data staging execution flag in said staging information table in response to a command.

16. A storage sub-system, comprising:  
a recording medium that contains data divided into predefined volume units;

data transferring means for controlling data transfer to and from said recording medium;

a cache memory for storing data transferred to and from said recording medium;

redundant data generating means for generating redundant data from a plurality of data;

data restoring means for restoring original data from the redundant data and from the data from which the redundant data is generated;

control means that manages said redundant data and the data from which said redundant data is generated as a parity group; and

a staging information table for storing data being transferred from the recording medium to the cache memory;

wherein successive data to current data being read is also read when said current data is read from the recording medium.

17. A storage sub-system as claimed in claim 16, wherein said staging information table contains a pre-read staging execution flag that indicates whether said successive data is also to be read.

18. A storage sub-system as claimed in claim 17, wherein, if said pre-read staging execution flag indicates that said pre-read staging is to be executed when the current data is read from the recording medium, forward successive data to the current data is read.

19. A storage sub-system as claimed in claim 17, wherein, if said pre-read staging execution flag indicates that pre-read staging is to be executed when the current data is read from the recording medium, backward successive data to the current data is read.

20. A storage sub-system as claimed in claim 17, wherein, if said pre-read staging execution flag indicates that pre-read staging is to be executed when the current data is read from the recording medium, forward and backward successive data to the current data is read.

21. A storage sub-system as claimed in claim 17, further comprising user input means for setting the pre-read staging execution flag in said staging information table.

22. A storage sub-system as claimed in claim 17, wherein said control means has input means for setting the pre-read staging execution flag in said staging information table in response to a command.